National Endowment
For The Arts
Design Arts Program
Issue 22
February 1981

FEDERAL DESIGN MATTERS

Urban Planning: Its Bias May Determine Our Future

Jane Jacobs and James W. Rouse Debate

The following texts are excerpts from speeches given by James W. Rouse and Jane Jacobs at the plenary session of the Great Cities of the World Conference in Boston, September 25, 1980, held in conjunction with the Second International Conference on Urban Design by the Institute for Urban Design.

James W. Rouse

We have come to know that the place, the circumstances, the institutions where people live exert a profound influence on their lives and their personalities. The failure to think and plan in terms big enough to create communities that work for people is not a failure that is limited to the shantytowns of the developing world. It is often an even more dramatic failure in the slums and ghettos of cities in the so called "developed" or industrial world. The destructive environment of slums is not transformed, but is exacerbated by clearance and rebuilding with huge cell-blocks of housing. The human being and the human family need nourishment for the soul, the mind, the personality Shelter alone is not enough. Human personality is suffocated in massive buildings. People become lonely, alienated, frightened, lose identity in the isolation of giant projects To provide for the well-being and growth of the individual and the family there must be community in scale with people. But persistently in big cities, huge, soulless housing projects are built Then there is dismay at the violence, crime, hostility and abuse which follow. And, too often, we overlook or turn away from opportunities to build effective communities.

Perhaps the biggest constraint in urban design is the habituated state of mind with which we look at cities. We are so accustomed to slums, sprawl, shantytowns, and to inefficient dehumanizing, ugly places—to attacking the latest crisis—that we don't see the city as a whole—don't think or plan in terms of what the city would be like if it worked, if we could get from here to there. We persist in a project state of mind—planning and developing in pieces—in pieces too small to deal with the deep issues that underlie the symptoms, too small to produce important solutions, too small to make the city work for its people.

The physical form of the City impedes and frustrates or assists and enables the way it functions, the way each of its systems performs and relates to each other. The Big Human Plan as I call it sees the City as a system. It embraces all of its parts and pieces, recognizes the interrelationships, lays out a diagram for a City (or part of a

Continued on page 2 column 2

Quincy Market's three buildings *(above)* were built in 1824-26 at the instigation of Boston's Mayor Josiah Quincy to designs by Alexander Parris The Markets fell into disrepair and neglect in the late 1950's The Rouse Company with the architectural firm of Benjamin Thompson and Associates, Cambridge, renovated these landmark buildings, 1973-78 They collaborated again on the construction of Baltimore's Harborplace, 1979-80, *(right)*. These two new buildings, devoted to the pleasures of shopping and eating, were designed with their successful precedent, Quincy Market, Boston, in mind.

Jane Jacobs

To say "Make no little plans" is silly on the face of it Big plans literally live off of little plans. For instance, this market at Faneuil Hall would be nothing without all the little bookshops, restaurants, and the myriad other things that came out of little plans. More than ten years ago another old plant, the Ghirardelli Chocolate Factory, was being recycled in San Francisco into a collection of restaurants and shops. It was a radical and daring thing to do at the time. It was also a great success.

Before the Chocolate Factory there were still smaller versions of the idea, among them a spaghetti factory which I remember seeing in 1958 in San Francisco. It was recycled when it seemed nobody was thinking about new uses for superannuated work buildings—least of all people who believed in big plans. They were only thinking about tearing them down.

By the time an idea is carried out on the scale we see here in Boston, and by the time the Boston market is cloned in Baltimore and New York, it is already middle-aged as an idea. The little versions come first.

Big plans stifle the imagination. The big plans of the 1950's, 1960's, and even most of the 1970's had stifled alternative ideas. All the big planners knew that it was bad big planning to put restaurants, shops and heaven-knows-what-kind of trivialities into what by rights was an industrial zone. Behind those big plans were grand social aims of much the kind Mr. Rouse has spoken.

Big plans stifle alternatives. They stifle new departures, and even something as delightful as this market will itself become a stifler, a smotherer and a routinizer as soon as enough big planners get hold of the idea This market may become the big dogmatic answer to what you do to give people a good time in cities, what you do with old buildings that need recycling, and what you do with urban commerce. As soon as a lot of big developers see what a money box this market is, they are going to imitate it in a big way. This market, which now seems to us so fresh and imaginative, will become a boring idea because of all its trite repetitions. We won't know what other alternatives are possible but of this we can be sure: if this market idea becomes the dogma of big planners, alternatives will be stifled

The ability of big plans to stifle alternatives is perhaps their most serious disadvantage. Consider the Interstate Highway System. That was a big plan, not only in its geographical scale and its cost, but also in its time scale When the Highway Act was passed in 1956, it was a twenty-year plan, and then it was extended later Suppose it had been more tentative. It would never have lasted twenty years, certainly not in cities. Now we can see what some of the side-effects of this big plan have been, and how inflexible it makes the United States with respect to transportation, energy use and so on The side-effects were not foreseen, nor the desperate need now for alternatives so long stifled in their very nature, big plans, especially those that must be carried out over a long period because they are so big, are

Continued on page 2 column 3

FEDERAL DESIGN MATTERS *presents an exchange of information and ideas related to Federal design.*

Architecture	Interior Design
Landscape Architecture	Industrial Design
Urban Design & Planning	Graphic Design
	Apparel Design

Director, Design Arts Program: Michael John Pittas
Assistant Director, Design Arts Program: Charles B. Zucker
Consulting Editor: Lance J. Brown

Editor and Writer: Leslie M. Freudenheim
Graphic and Technical Advisor: Robbie McEwen
Distribution: Robbie McEwen
Staff: Bert Kubli, FiFi Sheridan
Design and Production: Dave Brubaker, The Creative Group, Baltimore

About our Contributors

Lois Fishman is a freelance writer and researcher for projects in the arts and media.

Janet Heller is a writer who has worked for HUD and other government agencies. She was formerly the editor of *Metro News*, a publication of The Johns Hopkins Center tor Metropolitan Planning and Research.

Jane Jacobs is the author of *The Death and Life of Great American Cities, 1961; The Economy of Cities, 1969;* and *The Question of Separatism, 1980*

Gina Bari Kolata is a staff writer for *Science Magazine*.

James W. Rouse is Chairman of the Board of The Rouse Company. He is currently involved in creating a vehicle tor the upgrading of housing for the poor in the American city

J. Wynn Rousuck covers the arts for the *Baltimore Sun*. She spent last year on a National Endowment tor the Humanities Fellowship for Journalists at the University of Michigan, where she studied the impact of business and law on the arts.

Lori Simmons Zelenko is currently writing for *American Artist* magazine.

In order to reach a wider audience with design news and ideas, we are sending this complimentary issue to people involved in design and arts activities who have not been regular recipients of **FEDERAL DESIGN MATTERS**. We hope you find this newsletter stimulating and useful Future issues may be obtained from The Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

DO YOU WISH TO SUBSCRIBE TO FEDERAL DESIGN MATTERS?

Quarterly subscription	5.50 per year, domestic 6.90 per year foreign
Single copy	1.50 each, domestic 1.90 each, foreign

☐ Check or money order enclosed, payable to Superintendent of Documents

☐ Master Charge number ______
expiration date ______

☐ Visa number ______
expiration date ______

To subscribe return to

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Send FEDERAL DESIGN MATTERS to

Name ______

Address ______

FEDERAL DESIGN MATTERS is a publication supported by the National Endowment for the Arts.
FEDERAL DESIGN MATTERS does not represent official views or policies of The National Endowment for the Arts.

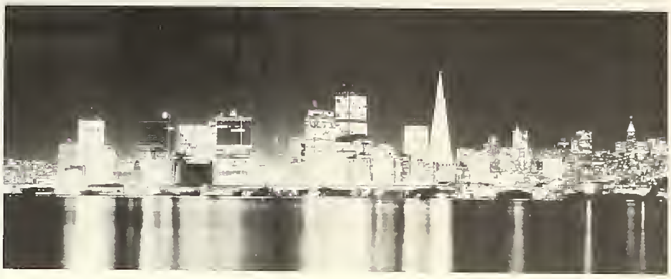
DESIGN BRIEFS

Joan Shantz

DESIGN INFORMATION NETWORK is a new international association and publication devoted to industrial design. The association is seeking members and the publication would like articles submitted in Spanish, French, English, and German. Interested persons should write to; D.I.N /S.I.D., Weinburgstrausse 11,8001 Zurich, Suisse.

GRAPHIC DESIGN FOR NON-PROFIT ORGANIZATIONS is now available from the American Institute of Graphic Arts, 1059 Third Avenue, New York, N Y. (212) 752-0813 The publication provides application techniques of basic design concepts to organizations wishing to improve their written communication. Prototypical examples are also included.

Developers' Dream, Planners' Nightmare



Although San Francisco's urban design plan called for stepping down building height as buildings approach the water, the approved structures *(seen above)* make San Francisco look as if it were located on flat land and they obliterate magnificent views of San Francisco's natural, hilly skyline.

San Francisco's City Planning Director, Rai Okamoto, discussed that city's planning with FDM Editor, Leslie M. Freudenheim.

Rai Okamoto is proud of San Francisco's predisposition to its appearance. It was the first city to adopt an urban design plan for the entire city Although no specific projects result from master plans, tall buildings ended up generally where they are supposed to be and hills remain untouched, Okamoto explained. Master Planning may dictate that buildings step down as they approach the waterfront but zoning laws will specify actual heights, and a city may or may not amend its zoning to reflect the Master Plan's ideals. "Buildings approved a few years ago, such as the Bank of America building and the Embarcadero Center towers, could not be approved today," said Okamoto. "We did adopt height and bulk regulations in accordance with the Urban Design Plan but some amendments were made which increased floor area ratios."

One can argue that artificial hills of business and residential towers counterpoint San Francisco's real hills. Unfortunately of late the economics of construction and elevators have established uniform 30-33 floor heights for tall buildings. So we are losing skyline variety.

"Would we be better off without an urban design plan?" Okamoto mused. "There are only three ways in and out of San Francisco, and our Master Plan, recognizing this fact, tries to steer new, tall construction towards transportation access. We do not have a regional governmental system, as does Toronto, and being only 49 square miles in size and having a prestigious location we find ourselves constantly pressured to accept new development. Logically speaking some of that development should take place across the Bay in Oakland; but Oakland lacks an image attractive to developers. It cannot yet attract prominent firms."

"The Federal Government could help cities such as ours," says Okamoto, "by not giving money solely on the basis of population. We have one million people entering and leaving San Francisco daily; yet we receive no funds to defray the cost of servicing these daily inhabitants. Block Grants are intended to assist local governments and neighborhood projects; but they frequently allow political games to be played in the name of responsiveness. Sometimes other additional federal grants, such as those from EDA, foster fragmentation and additional bureaucracy at the receiving end, since there must be a city agency created to handle such grants."

"Here in San Francisco we have an Environmental Impact Process, mandated by the State, by which the Planning Commission holds hearings and listens to community concerns; it is sometimes thought to be an anti-growth measure, but the Commission has never turned down an office building though many have been modified to mitigate their environmental impacts."

"San Francisco is not Venice; it is not a jewel to be preserved, but a living, thriving, vital city which must change and grow as its residents will do for years to come."

Rouse continued from page 1

City) that will work better, makes it function at the best that can be forecast with all that people need or do in mind.

This is not a grand design for a building or a group of buildings. It is not monumental architecture. It is not a broad brush rendering of an imaginary city. The Big Human Plan is the practical plan. It is born of careful craftsmanship by people working together as a team—people with experience and knowledge in each of the functions that together account for the life ot the City—or for that part of the City on which attention is focused. It produces a believable image of what will work best for the City and its people. It is a plan that unites planning with the reality and the expectancy of development—schedules it, costs it, reconciles the conflicts, finds the reinforcements between the physical, the social, the economic. This kind of large scale comprehensive plan recognizes that there is a whole that is truly greater than the sum of its parts. It establishes a continuing process for reexamination and testing of the Plan and the development progress. It expects revision as a creative part of the process to meet new needs and yearnings of the people, new economics, new opportunities, new problems.

This may seem difficult and demanding—and it is It is much easier just to see the City for what it is rather than the best it might be. It is easier to plan by responding to events as they come upon the City, to crises, to development proposals. But these little plans never see the City's total needs and possibilities. They don't create new, compelling, rational images of what the City might best be.

The other side of every constraint—every problem—is opportunity. It is our task and must be our state of mind to accept new conditions as a part of continuing change and to see the opportunities in them.

We need new solutions that respond to the energy shortage by finding cleaner, quieter, better ways of moving about; new solutions that use limitations on capital resources and personal income to reduce materialism, build self-reliance, and set new life styles. We need solutions that see threats to our environment as the road to tresh relationships between man and nature, untapped solutions that will compel reductions in the arms race and in military budgets to release funds for human needs everywhere. There is a good, new world out there waiting to be discovered, used, enjoyed; but we must believe in it; plan for it; rise up to its highest possibilities with plans as big as its potential.

Jacobs continued from page 1

bound to be mistaken This is because everything we do changes the world a bit. We can't anticipate all the side-effects and repercussions. Big plans render us unadaptable We can't adjust to unforeseen changes. We can barely acknowledge the changes as they become evident. We become too committed, in a big way, to our big plans.

Life is an *ad hoc* affair It has to be improvised all the time because of the hard fact that everything we do changes what is. This is distressing to people who would like to see things beautifully planned out and settled once and for all; that cannot be.

Many Americans no longer have faith in big plans. They have seen too many turn out too badly Nowadays we hear *You can't solve problems by throwing money at them.* And we hear *The bigger the plan the worse it will be.* The era ot American faith in big plans came to an end, symbolically, when that building in the huge Pruitt-Ingoe public housing project in St. Louis was dramatically dynamited by the authorities. The project had become so hopeless. When it was built, it was praised, given prizes, considered marvelous precisely because it was so big and controlled such a great hunk ot city environment When that explosion went off, it marked the end of an era in many people's thinking

To be sure we have to use foresight—or try to—which means we have to make plans A few of them even have to be big because of their content But a good rule of thumb would be to make no plan bigger than it must be If we are going to err in our planning—and we are, because what is pertect?—it is better to err by making the plan a little too minimal, a little too dependent on future improvisation, rather than the reverse. The deadly thing is to forestall improvisation, to stifle alternatives, to try to control how things are to be far into the future.

Architects nowadays, or rather the more imaginative and creative among them, are thinking a lot about flexibility and improvisation, about how to build to accommodate entirely unforeseen plans, yet unborn. The developers and planners trail behind the architects, probably because developers and planners have been taught to think big, even more than architects have.

Mr. Safdie said many true and interesting things, and I was going along in my mind saying "Yes, that's so" to most of them, but he lost me at the end when he came to his upshot and conclusion: we must conceive new urban models to humanize cities. Believe me, our cities are not going to be humanized by conceiving new urban models at Harvard!

Torres Blanca, Madrid. So-called "tree-form" architecture requires the close cooperation of architect and engineer right from the initial planning phases. Photograph, Lynn S. Beedle.

NSF: Gains For Applied Research and Engineering

What about architecture and design?

Gina Kolata

Frederick Krimgold, Program Manager for Design at the National Science Foundation (NSF) came to the NSF three years ago to develop an architectural research program. He has managed to significantly increase support for architects and planners; nevertheless, support for architectural and planning research at NSF is currently limited to research on the effects of earthquakes on buildings and how to reduce expected earthquake damage. Krimgold thinks that the NSF could do far more for architectural research.

Engineer Lynn S. Beedle of Lehigh University, who is director of the Council on Tall Buildings and Urban Habitat, and architect Charles Burnette, who heads the Philadelphia architectural firm, Burnette and Associates, agree with Krimgold. Both say that part of the problem is that the NSF is geared toward recognizing and funding traditional scientific research in an academic environment. Some of the most important research areas in architecture and design unfortunately don't fit that mold.

Beedle explains that his own specialty—tall buildings—provides several examples of interdisciplinary research problems that do not fall into any of the established niches at NSF "Engineers can design structures but unless they interact closely with architects and social scientists who can tell of human responses to the structures, the results may not be as satisfactory as they could be... Fortunately, some NSF program directors have found ways to fund some of this design research within the present system But there needs to be a recognized home for it," Beedle says.

An outstanding interdisciplinary problem in tall building design is the problem of motion. Tall buildings sway slightly in high winds and even though engineers can design structures strong enough to resist damage from such motion, if the buildings are not properly designed for motion perception, people in the buildings may feel quite uncomfortable. Designers of the John Hancock Center in Chicago made extensive studies of just which aspects of the motion are most disturbing—the magnitude or the acceleration. They learned that acceleration is what bothers people and designed the Center so that its occupants would feel comfortable. In the past, designers of some tall buildings did not take this motion into account. A building in Boston, for example, swayed so much that it had to be stiffened after it was completed because its motion made people feel queasy. In many cases, says Beedle, the fact that a building's motion is perceptible is not publicized. "The owner of a building doesn't like that information to get out. It makes it difficult to rent space," he explains.

Another interdisciplinary design problem is the economics of tall buildings. Buildings usually grow tall as land becomes expensive. It is in evaluating the economics of the larger issue of concentration-vs-sprawl that so many interrelated factors must be considered. Is it more economical and environmentally beneficial to develop a cluster of tall office buildings and apartment buildings (or mixed use buildings) or is the traditional suburban-sprawl-and-commute-to-downtown the best approach?

To get clear, comprehensive answers, truly definitive research would need to consider a myriad of factors such as the costs of building energy, the pollution and corresponding health costs, the cost of urban services (fire protection, water supply, transport, power, sanitation) the cost of the time involved in transit, and especially the energy consumed, the cost of land removed from food production to create the suburbs, and the cost of providing the amenities that make life enjoyable in our urban society. Our very lifestyle becomes involved. And in order for this research to have any affect at all upon where people live, architects, engineers and planners will have to take into account human response. It clustered apartment and office buildings are more economical in the total sense than suburban sprawl what are the factors that can persuade people to choose apartments over single family homes? In certain communities "marketplace economics" already resulted in the move to downtown housing—housing either in the form of new apartments or in high-rise buildings converted from other uses or previously abandoned dwellings of prior decades.

According to Burnette, one reason the NSF has been unresponsive to suggestions that it support interdisciplinary research in architecture and design is that there are very few reviewers of NSF grant applications who are trained in architecture. Most NSF reviewers, he says, are scientists and engineers who "don't understand what research is for a designer."

A second problem is that NSF reviewers tend to look at the engineering or scientific training of the applicant to decide whether he or she is capable of doing the research. "Yet," says Burnette, "in many cases the practical background is most important."

Finally, the NSF is essentially run by scientists and engineers and most of these are academic scientists. According to Burnette, these scientists do not view architectural schools as places where scientific research is possible. "It's been a frustrating experience for a great number of architects who tried to submit proposals. They use different language and they don't have the normal scientific background and academic setting that most research applications require," Burnette says.

Krimgold is basically sympathetic to these complaints but he feels himself only a tiny cog in the NSF machine. "I would like a little recognition at NSF that architecture is not all subjective artistic inspiration. It involves resource allocation, it gives physical expression to social values, it influences access to resources," he says.

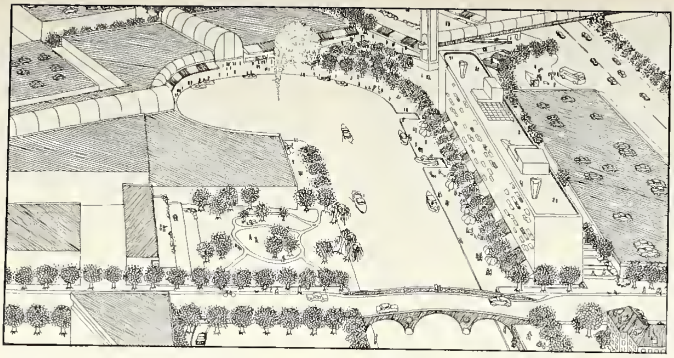
Krimgold sees some possibility that engineering research, including research in architecture and planning, may get more emphasis at the NSF in the future. In the fall of 1980 Representative George Brown (D., Calif.) proposed that engineering and applied science be moved from the NSF to a National Technology Foundation that would fund applied research. Those who supported a technology foundation argued that the NSF is too stodgy and too intent on perpetuating pure scientific research. According to Krimgold, however, "everyone agrees that Brown's present bill is unworkable. Brown put it up as a lightning rod."

In response to these criticisms of the NSF, John Slaughter, Director of NSF, announced on November 21 that the agency will be reorganized to place more emphasis on applied research and engineering and that a separate engineering directorate will be created within the NSF. In the past, engineers and applied scientists have been given only 10% of NSF funds.

Still, Krimgold thinks the NSF is entrenched in the traditional ways of viewing science and will change only with difficulty. "What I find disappointing is that without expansion it is impossible to refocus attention on new fields. The NSF finds it easier to fund established research disciplines than to risk investment in new fields and young researchers. It will take a strenuous effort on the part of people like Brown and the engineering community to shake that tradition," he says.

The Tall Building Council is just completing five volumes devoted to tall building interaction with the environment. These volumes give not only the state of the art in the field but they also identify areas of needed research, many of which are interdisciplinary. Publisher: American Society of Engineers.

(above) John Hancock Center, Chicago, 1968, architects Skidmore, Owings and Merrill, 100 stories or 1127 ft tall, required special studies to assure that motion under wind is not perceived by occupants. Photograph, courtesy U.S Steel Corp.
(below) Pruitt-Igoe Housing, St Louis, 1952-55, architect Minoru Yamasaki Failure to consider the appropriate humanizing factors in the design led to vandalism and finally demolition.



(left) Lechmere Canal Park and Development Area: basic concept by Dennis Carlone, 1977; drawing by George Vogt; park design by Carol Johnson & Assocs. The Canal will be widened to serve public boating and ice skating; and this public improvement will serve as a focal point for $100 million of private development.

(opposite page) The Henry Street Playhouse, New York City, 1915, and its addition, The Arts for Living Center, architects Prentice & Chan, Ohlhausen, 1974, are completely connected on all levels. The rounded addition provides an outdoor amphitheater and eating area. The addition was made possible in part by a $600,000 EDA grant, part of a $50 million Federal program intended to create new and useful construction projects in high unemployment areas. Total cost of the addition: $2.3 million.

"UED taught us the importance of reaching people not usually thought of as designers, such as engineers, traffic engineers, and elected officials who make decisions. We have tried to analyze all agencies' roles in the design process in an attempt to unify and simplify that process and the permit system."

Larry Watts
Chief City Planner, Birmingham, Alabama

Suburbs Beware: Aesthetic, Livable Cities Will Prosper

Andrew F. Euston, AIA, is HUD's Program Officer for Urban Environmental Design (UED). He has long held the view that fragmented decisions strangle cities and that concern about the quality of the built environment should be addressed administratively. In 1979, HUD awarded The National League of Cities a two-year contract to work in 40 localities utilizing UED concepts. Dwight Smith, a city planner and administrator, is the NLC's UED Project Director.

FDM asked Janet Heller to explore the UED concept with Euston and to find out from Smith what role the NLC is playing in the program.

Andrew F. Euston

"Architects need to understand city government and public administrators need to appreciate the issue of livability."

HELLER: What is UED?
EUSTON: UED is really a new field of administrative competency which seeks to break urban planning and development from the federal, state and local strait-jacket of fragmented administrative structures that are tied to urban physical systems. It uses public and private collaboration, citizen involvement, interdisciplinary team work, design communication, and cost-benefit analysis to ensure more balanced decisions and more effective federal investment. The process of UED involves everyone—decision makers and citizens alike. UED is simply saying 'let's remind ourselves why we are here: to deliver a satisfactory end-product. And that end product is a livable city.'
HELLER: How do you define the urban environmental design field?
EUSTON The National Environmental Policy Act (NEPA) of 1969 and the HUD Act of 1974 both call for an interdisciplinary approach that combines the natural and social sciences with "environmental design arts" in any federally assisted construction. In addition, more than a dozen other Federal laws mandate design requirements that local and federal governments must observe. Since 1974 our biennial HUD Design Awards have elicited "urban design administration" entries evidencing new and viable uses of the design process to achieve improved public management. The trend benefits the programs of all Federal agencies that assist with city building
HELLER: What specifically does UED affect?
EUSTON It concerns local level decision-making and investment that affect the physical habitat. Local government's administrative processes are guiding future urbanization. Some of these processes are more successful than others at reconciling public objectives, some are more sensitive to people, some more cost-effective, some more ecologically and environmentally sound and some serve to blend all three areas of concern.

As a management concept for community planning and development, UED is based on hard lessons learned in American cities and towns. Our cities have been testing increasingly sophisticated options for growth and development. Some cities have made the most of these options and those that have are those that recognize the part that design should play throughout planning and development.
HELLER: What has happened to cities?
EUSTON: I think we have removed ourselves from what traces of naturalness there were in our human settlements by the magnitude of the scale at which we've built. In the early part of this century, and before that in all of human history, any city in the world could be traversed by foot or horse in an hour. Today we are dealing with an order of magnitude of ecological and environmental artificiality that challenges the nervous system, the family system, the social system, the political system, and the ecosystem.

HELLER: Can you explain how UED helps deal with this in more detail?
EUSTON Fragmented decisions strangle cities. Currently decision-making is fragmented by a system that is good for accountability and budgeting, but presents problems in terms of communication and cooperation. This is not the case in a few cities. Researchers at M.I.T., Rice, and the University of California, Berkeley, are preparing a handbook for local government officials which will include a model they can use to implement UED ideas. It will show a city how to organize its design and development activities.
HELLER: Who is spreading the word about UED?
EUSTON We have a contract with the National League of Cities and Design Communications Collaborative in Washington. The Project for Public Spaces, Inc., William H. Whyte's interdisciplinary group, is helping seven economically distressed cities to introduce its new approaches to design and management. The cities include: Boston, Providence, New York (The Bronx), Philadelphia, St. Louis, Atlanta, and Hartford. Then there are contracts with the National Main Street Center, Partners for Livable Places, and with several local community design centers The

Standardizing Criteria: Reliability?

Lois Fishman

The Center for Building Technology is part of the National Engineering Laboratory of the National Bureau of Standards. Dr. Francis T. Ventre heads the Environmental Design Research Division, one of five divisions of the Center. This article is based on field visits and interviews with Dr. Ventre and others involved in the research programs at the Center.

In one wing of the lab a research psychologist searches for a way to illuminate red with a low-pressure sodium light In the acoustically isolated Sound Building, an acoustician is setting up a testing session in a room that looks like a living room, but is in fact a meticulously calibrated psychoacoustic research facility. At the Norris Cotton Federal Building in Manchester, New Hampshire, other researchers are winding up an evaluation of user acceptance of energy conserving designs and building operating practices.

These scientists are all in the measurement business, at work on projects conducted by the Environmental Design Research Division of the Center for Building Technology (CBT). CBT performs research and offers technical assistance to the Nation's building community in carrying out its mission: to provide technical and scientific bases for criteria and standards that will improve the productivity, safety, and energy use of America's buildings.

With many contradictory or incompatible descriptors and measures for environmental conditions in use, performance of completed facilities is all too often unpredictable. Part of the task of CBT and EDRD, according to Dr. Ventre, is to bring the advantage of accurate measurement methods and standards to government and private building.

The difficulties in environmental design research are due not only to the "diverse, dispersed, detached and discontinuous nature of the industry", says Ventre; complications occur because there are both objective, physical components and subjective, psychological components to our understanding of environmental functioning. Specifically, how much an office worker's effectiveness is reduced by traffic noise from the nearby highway is not only a function of its loudness and the acoustic isolation provided by the building walls, but also of the frequency of the noise, its changing quality over short or long time spans, its relative predictability, the level of indoor noise, the nature of the office worker's task, and the nature of the worker's psychological associations with that noise. User response to the built environment is clearly important; consequently, half of the Environmental Design Research Division staff are psychologists with advanced training in research methods for measuring responses to space, sound, and light.

Recently EDRD and OSHA became partners on a research problem. The Occupational Safety and Health Administration (OSHA) approached Dr. Robert A. Glass, a research psychologist with a specialty in the psychophysics of vision, because industrial workers were failing to detect warning signs in loading docks where energy efficient low-pressure sodium lights were in use. In effect, the color coded signs for safety, mandated by Federal law, were just not visible. OSHA was concerned that this kind of problem would multiply as energy-efficient lighting was installed in more and more workplaces. OSHA provided funds and the initial definition of the problem; EDRD provided expertise, facilities and a recasting of the questions towards more generic answers, thus making the results more widely useful to the building and scientific communities.

"Color is really a 'pigment of your imagination'."

Using controlled laboratory conditions, Dr. Glass measured the changes that take place in color perception under light sources of limited wave lengths—mercury, low-pressure sodium, high-pressure sodium. The common incandescent tungsten lamp emits energy at all wavelengths, rendering the color spectrum remarkably similar to the way we see it in daylight. The newer lamps—nine times more energy-efficient than tungsten, emitted a much more narrow range of wavelengths, principally in the yellow range. The consequence of limited wavelength emission can be difficulty in color perception for the human viewer, unless adjustments are made. In OSHA's case, the lighting was turning red warnings nearly invisible to the workers' eyes.

Dr Glass explains, "What you save in dollars with energy efficient lights you sacrifice in color rendition . To utter "red" is to sum up experiencing the energy output of the light, the coloration of the material being illuminated and the adaptation state of your brain Color is really a 'pigment of your imagination.' "

What effects would this new lighting have on colors specified by designers presently unaware of the effects of the new lighting? "You could have color chaos," admits Dr. Glass. His solution is a joint project with researchers from the paint and textile industry to develop pigments and fabrics that respond "correctly" to more energy efficient high-intensity discharge lighting.

OSHA's role in proposing and funding the color research is indicative of the current situation at CBT and EDRD. 30% of the Center's FY'80 budget of $14.8 million was provided from the Congressional appropriations to the National Bureau of Standards. The remaining 70% is sponsored by other Federal agencies with building-related problems. An advantage to this arrangement, says Dr. Ventre, is that research results find their way to eager users through the sponsoring agencies; however it does make long-range planning for staff and facilities development more challenging

How does a public laboratory decide which of the thousands of research challenges to pursue? This is a process, tied, of course, to the laboratory's mission. One part of this process is to consult widely with all segments of the building community. The professional societies that represent the design segment of that community—the American Institute of Architects, the Illuminating Engineering Society, the Society of Environmental Graphic Designers, among others—can help to set priorities for future research at CBT and EDRD. Dr. Ventre concluded that "if environmental designers become more active in sharing with us their assessment of needs for reliable knowledge about buildings, then we can work together on the questions that matter to them and, ultimately, to the nation of building users."

SCUA
NEA
500
no.22
Feb 1981

"UED finally gave the Planning Department weight with Burlington's Mayor; it enabled us to demonstrate that many people of prominence throughout the country are convinced that good design enhances cities."

"The Mayor and Board of Aldermen passed a new ordinance requiring any project in the central city costing over $5,000 to submit to design review."

"In the future I hope UED will introduce still more experts, beyond those from the eleven case study cities."

Mark Brodeur
Assistant Director for Planning &
Zoning, Burlington, Vt.

former deals with thirty small towns helping them to revitalize their commercial districts, and the latter is a group working with thirty other larger cities to introduce improvements to the public environment through different investment strategies. Also, there is a grant to assist Atlanta, Knoxville, and several other community design centers in the south with their neighborhood focused services.
HELLER: What are the major obstacles to UED at the local level?
EUSTON: Elitism. . . . the elitism of designers who disdain administrators, the elitism of city managers who disdain public involvement; and the elitism of lawyers, accountants and engineers who can't relate to unquantifiable issues of urban function.

Wherever professionals create their separate domains and fear interaction and collaboration, there are obstacles. That is one of the problems. Another is lack of conscious attention to the interdisciplinary approaches that are proving successful. For example, architects need to understand city government and public administrators need to appreciate the issue of livability.
HELLER: Is it too late for UED?
EUSTON: It is never too late If people want more livable and efficient cities, local government is where design responsibility, accountability, creativity, initiative taking, and orchestration have to occur, or they aren't going to occur. If the quality of the built environment is being addressed administratively, then you can conclude that there is an answer. We're calling that answer "urban environmental design," or design administration.

Dwight Smith

"The quality of a city's physical environment is critically important. If cities are to compete with suburbs, they have to be more livable."

HELLER: How did the NLC get involved in UED?
SMITH: The quality of a city's physical environment is critically important. If cities are to compete with suburbs, they have to be more livable. So NLC looked for ways to get city officials interested in the importance of design Design, as you know, is often tucked in as an afterthought.
HELLER: What exactly are you doing?
SMITH: We are educating local government officials and marketing the importance of design as a fundamental consideration to sound investment. A monthly newsletter, DESIGN, focuses solely on UED and reaches the full NLC membership.
HELLER: What cities are designated case studies and why?
SMITH: Case study cities have developed a design plan on which they are working partly by being paired with one or more of the model cities. Baltimore, for example, is working with Charleston. The NLC provides them with technical assistance and advice.

The case study cities include: Birmingham, Burlington, Charleston, Gulfport, Hartford, Kettering, Lincoln, New Orleans, Philadelphia, San Antonio, and San Diego. There were 120 cities interested in being case studies. Each applicant was ranked according to the kind of design management system it was using and on the relative effectiveness of its design management tools. Model cities, of course, had the best utilization of these tools with the case study cities having a need to improve. We were not interested in starting from scratch with any city. Selections, therefore, were based on region, size, form of government, and the existence of some design management tools.
HELLER: How would you assess the UED Project to date?
SMITH: I think we have been quite successful making city officials aware that good design is their salvation. Cities are competing with the suburbs and one way to meet the competition is by providing an attractive urban setting which will draw people back to downtown areas.
HELLER: Are you encountering any resistance to the Project?
SMITH: The biggest resistance comes from interdisciplinary rivalry. The most important person to be won over in any city, of course, is the Mayor. Urban design management is a collaborative project. If that fact is not appreciated, there is no hope.
HELLER: What was going on prior to Federal recognition of the UED concept?
SMITH: There were always some professionals who were using it, but there was no Federal interest in the need for an interdisciplinary approach to urban design and management. Ten years ago HUD was giving out funds for public housing without any socially based design consideration, and it supported total land clearance as the easy answer.
HELLER: What is HUD's commitment to design today?
SMITH: HUD has charged NLC with promoting design improvements in a systematic way. Initially, each of the case study cities sent a design management team (the Mayor plus the heads of Planning and Economic Developments) to a symposium where they met with representatives from the resource or model cities. Each team, with the advice of these representatives, worked out an action plan that could be implemented in their city to make design improvements. This has been followed up by NLC. Our publications are constantly promoting ways to make such improvements and citing examples as to where they have taken place. The NLC is the best salesman in the marketplace to sell the UED concept. We believe in it and want our membership to at least be aware of its merits and consider its possible use

Unlikely Partners: EDA Funds Cultural Facilities

Excerpted from an article by J. Wynn Rousuck

In the days of the Medicis, it was established practice Government financed the arts. The cultural palaces that housed these treasures were the Medici palaces. A neat package.

In the intervening centuries, the arts have increasingly had to fend for themselves. Because buildings which house cultural facilities are often not government owned, raising money for their construction becomes more and more difficult.

So, the government is back in the act. Only now there's a big change. Suddenly the arts are being valued for their corollary properties.

For more than three years the Department of Commerce has been guiding cultural projects under the aegis of the Economic Development Administration (EDA). Four properties of these projects make them attractive targets for government grants: 1) they are people magnets; 2) they are labor intensive; 3) they are small businesses which create a demand for other small businesses; and 4) they are environmentally sound.

A department spokesman explains that grant proposals which have not been funded fall into four categories: 1) the proposed facility is not in an economically-distressed area; 2) it's a valid cultural project, but its projected economic impact is minimal; 3) it's a project which does not reflect a major concern for the area's overall development strategy; and 4) it cannot demonstrate a management or programming capacity to implement the project.

Perhaps one of the biggest deficiencies of the EDA cultural resources program is its relative obscurity. So far, no official guidelines have been published "The decision was made that it could be misleading and offer more assurance than it would be fair for us to offer," one administrator explains. In other words, without the money to back it up, EDA doesn't want to get flooded with applicants. (In FY 1979, $21 million of EDA's total program funding of $707 million went to 38 cultural projects.) In the meantime, officials admit the program might be missing some qualified projects, but that is a limitation they have to live with.

The East Bay Community Center, Charleston, S.C., remodeled from an incinerator, 1979, by architects Lucas and Stubbs, using part of a $2 8 million EDA grant to Charleston. Photograph © Gordon H Schenck The rest of the EDA money went to restoring the Garden Theater and to projects such as paving and drainage, for which EDA is better known.

Transportation Priorities: What Are Our Goals?

French Street Station, Pennsylvania Railroad, Wilmington, 1905, architects Frank Furness, Evans and Co This terracotta brick, and granite building will have its exterior faithfully restored and its interior modernized, 1979, architects Skidmore, Owings & Merrill and Moekel, Carbonell & Partners

Lori Simmons Zelenko

In 1977, Brock Adams, then Secretary of the Department of Transportation, committed DOT to an emphasis on the quality of the built environment and the pursuit of good design, art and architecture. Since then DOT, under the leadership of Secretary Goldschmidt, has allocated funds for artworks within transit facilities. This action is based upon the assumption that attention to design quality produces economic benefits. Specifically, improve a transit system, aesthetically and functionally, and it will attract more riders which means more fares will be collected and more money will be spent in the surrounding communities To this end DOT advocates design achievement in all of its programs

The design programs as defined by DOT include architecture, landscape architecture, graphics, interior and industrial design. DOT has endorsed one set of symbol signs nationwide Based upon existing European symbols, the United States DOT symbol signs evolved by Tom Geismar of Chermayeff and Geismar communicate their message *pictorially* with minimum verbage to make their information clear to non-English speaking people

Although the DOT design programs are in part motivated by aesthetics, safety and efficiency are also primary considerations, sometimes to the detriment of the aesthetic result. According to Don Bowman, community planner and landscape architect with the Federal Aviation Administration, "The FAA is more in the business of accommodating machines than of accommodating people" Bowman's recently published book offers good examples to airport management and to designers on how to improve the quality of life in airport terminals The FAA abandoned its art funding program after it was criticized for its involvement It returned the financial responsibilities for art in airport environments to the state and local levels. The FAA feels its priorities are exclusively with safety design, Bowman said

The Urban Mass Transit Authority's policy stated that the integration of art and design principles in the planning, building and operating of the mass transportation systems is essential. New railroad starts, rehabilitated railroad stations, buses and bus shelters, patterned sidewalks, auto-restricted zones, sculptures, plantings, and street furniture along transit malls are some of the projects UMTA plans to fund Marilyn W Klein, Environmental and Special Projects officer in the Office of Policy and Program Development of DOT observes, "Introducing art into transportation design is a new thrust; but it must be understood that good design does not compete with other priorities that might appear to be functionally rather than aesthetically oriented."

Terminal Design: Railroads and Subways

"Ridership increases when a station is improved," Mrs. Klein says; "however, if the station does not offer the practical connections to other transit modes, no matter how well designed, its ridership does not increase." Local communities supportive of station enhancement programs can participate by raising funds to match UMTA grants. Art works in new rapid rail systems in Atlanta. Baltimore and Miami are being financed by UMTA as part of the construction funding for those projects.

New York City is continuing its Adopt-A-Station Program. Conceived in 1975, it coordinates local business and institutions, major corporations and foundations, neighborhood groups, the arts community, and several city agencies in the rehabilitation of the city's subway system, using UMTA and National Endowment for the Arts funds.

Boston is involved in a similar project, Arts On The Line, which is signing contracts now for the fabrication of art to be installed over the next two years. "Renovating old subway stations gives DOT a better image," comments Jennifer Dowley, Project Director of AOTL, "but among the more important public benefits are better surface business, a decrease in vandalism since would-be vandals are deterred by well-lit, well-designed spaces and by a general up-lift experienced by the entire community."

Vehicle Design: Buses and Taxis

"The United States has not been a leader in transportation design since the 1930s," said Mark Greenwald, urban designer/transportation planner in the New York Department of City Planning.

When it comes to vehicle design, the 'Buy America' policy has aimed at protecting American auto companies, but not necessarily at protecting American passengers. In the case of the Transbus, UMTA supported the development of a bus accessible to the handicapped, quieter and less polluting than the current buses on the market Irving Cohr, a spokesman in the UMTA public information office, said that American companies, Grumman Flxible and General Motors, found the Transbus specifications too expensive to meet and refused to bid They did offer DOT what is known as the Advanced Design Bus, a bus without most of the advantages of the Transbus and with a new set of disadvantages. Since the 'Buy America' policy requires UMTA to purchase U.S. equipment, European or Canadian companies did not bid on Transbus and cannot bid on any other DOT project even though they may have better design solutions than their American competitors DOT professes to be concerned with safety yet it funded purchases of the Advanced Design Bus which has one small emergency exit in the roof Irving Cohr feels that "you would have a hard time proving from statistics that there is a safety problem with transit vehicles. Other than a fire in a BART train several years ago, I can't recall any major mass transit accidents." He adds, "UMTA is not a regulatory agency. We can't enforce safety standards. We are a grant agency."

DOT advocates efficiency, yet it allocated Federal funds for municipalities to buy the Advanced Design Bus, which only gets three miles to the gallon, in comparison to the previous bus, which got five miles to the gallon. The Bus also has widespread problems with the air-conditioning, which caused passengers in St. Louis to break the sealed windows during a heat wave last summer when the buses were first introduced.

Guilliaume, Smith, Markart, a Canadian firm, designed a "purpose built" taxi fabricated with proven North American suspension, power-train and electrical parts. The GSM taxi holds five passengers—three on a bench seat and two on jump seats—or it accommodates one wheel chair occupant plus three other passengers. It utilizes light duty truck components made of steel, fiberglass, and shock-absorbing urethane plastic. UMTA, aware of this successful and already functioning vehicle, chose to give a $600,000 grant to a competitive design project, the MacFarland taxi The UMTA taxi is made of aluminum which does not resist minor scratches, dents, and rust like the urethane in the GSM taxi, and thus is expensive to maintain. "UMTA is a political agency," from Mark Greenwald's point of view "It funded this taxi because the aluminum industry is suffering Manufacturing these vehicles might give it a boost."

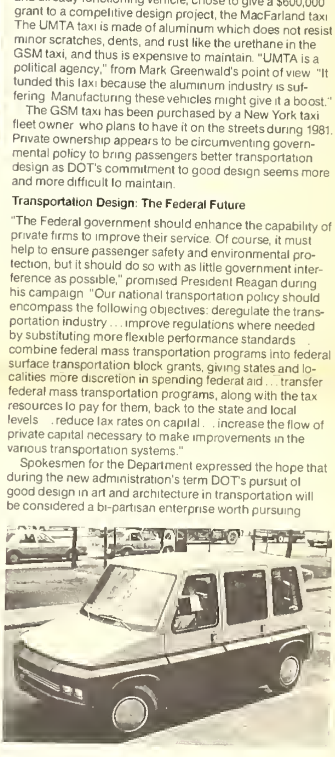
"The Buy America policy . . . aimed at protecting American auto companies, but not necessarily at protecting American passengers"

The GSM taxi has been purchased by a New York taxi fleet owner who plans to have it on the streets during 1981. Private ownership appears to be circumventing governmental policy to bring passengers better transportation design as DOT's commitment to good design seems more and more difficult to maintain.

Transportation Design: The Federal Future

"The Federal government should enhance the capability of private firms to improve their service. Of course, it must help to ensure passenger safety and environmental protection, but it should do so with as little government interference as possible," promised President Reagan during his campaign "Our national transportation policy should encompass the following objectives: deregulate the transportation industry . . . improve regulations where needed by substituting more flexible performance standards . combine federal mass transportation programs into federal surface transportation block grants, giving states and localities more discretion in spending federal aid . . . transfer federal mass transportation programs, along with the tax resources to pay for them, back to the state and local levels . reduce tax rates on capital . . increase the flow of private capital necessary to make improvements in the various transportation systems."

Spokesmen for the Department expressed the hope that during the new administration's term DOT's pursuit of good design in art and architecture in transportation will be considered a bi-partisan enterprise worth pursuing



This taxi, designed by the Canadian firm, Guilliaume, Smith, Marquart, can hold five passengers or one wheel chair occupant and three other passengers

NATIONAL ENDOWMENT FOR THE ARTS

OFFICIAL BUSINESS

U.S.MAIL

Postage and Fees Paid
National Endowment
for the Arts